

Five-Year Plan

and

PDG Deliverables and Prioritized List

Historically, research by PDG members has been recognized as the secret to the success of PDG.

It is the key ingredient that assures that RPP is produced by highly qualified active physicists.

Juerg Beringer	– ATLAS
Cheng-Ju Lin	– Daya Bay
Weiming Yao	– ATLAS
Michael Barnett	– Theory/ATLAS

The research time is therefore charged equally to the research project and to PDG.

Scientific/Comp. FTEs

DOE Review

Person	FY08	FY09	FY10	FY11	FY12	DOE
Barnett	1.0	1.0	1.0	1.0	1.0	75%
Beringer	0.75	0.75	0.75	0.75	0.75	61%
Yao	0.75	0.75	0.75	0.75	0.75	93%
Lin	1.0	0.75	0.75	0.75	0.75	87%
Hiree				0.75	0.75	90%
Retirees	0.6	0.6	0.6			100%
Zyla	1.0	1.0	1.0	1.0	1.0	83%
Computing	0.1	2.0	1.9			90%
TOTAL	5.2	6.85	6.75	5.0	5.0	

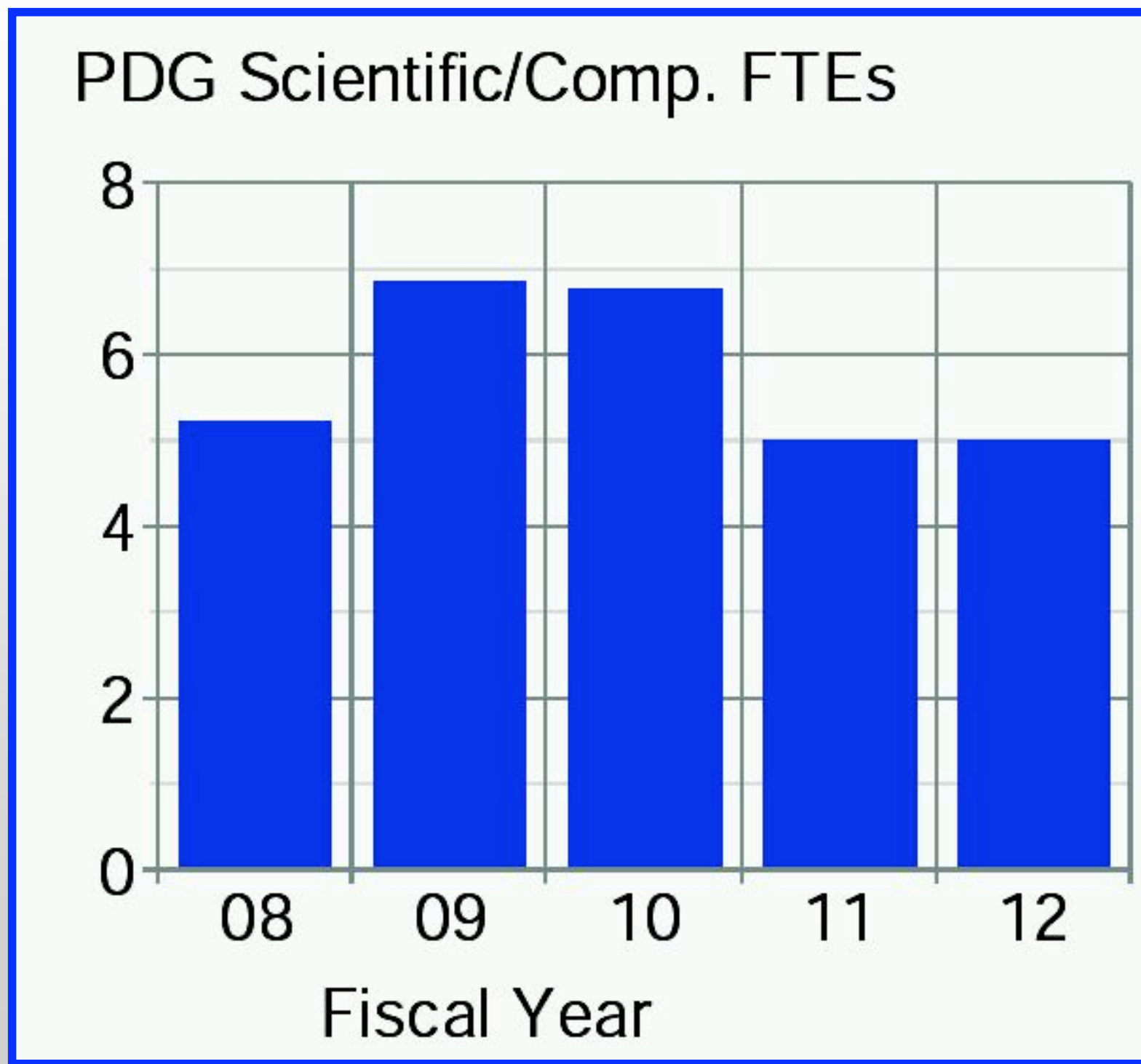
Retiree FTEs

DOE Review

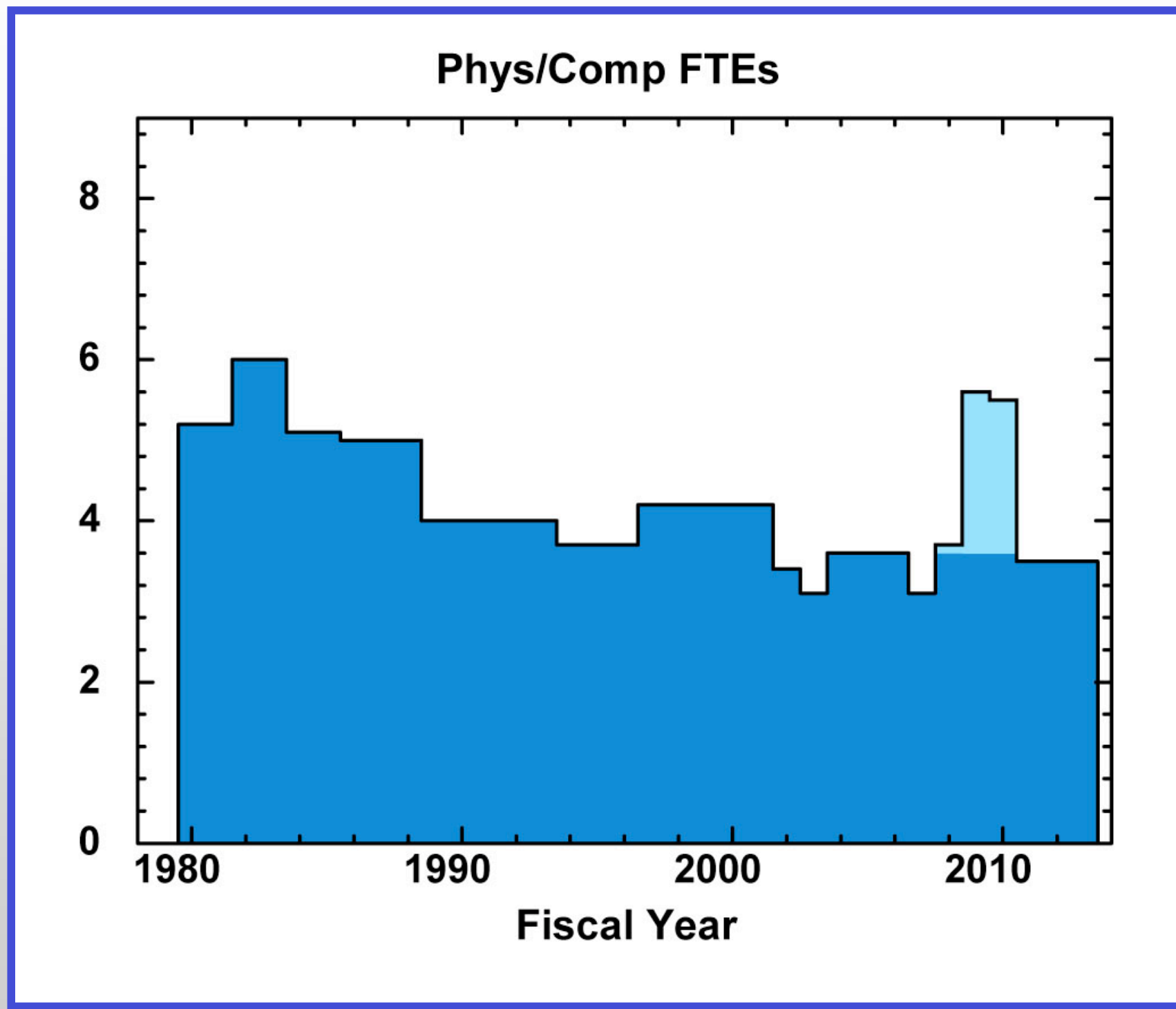
Person	Paid FTE	Actual Work	Years retired
Groom	0.20	0.80	5.5
Wohl	0.15	0.20	14.5
Dahl	0.05	0.50	9.5
Trippe*	0.2	0.2	6.0
TOTAL	0.6	1.6	35.5!

* Trippe likely not working beyond FY08

Scientific/Comp. FTEs

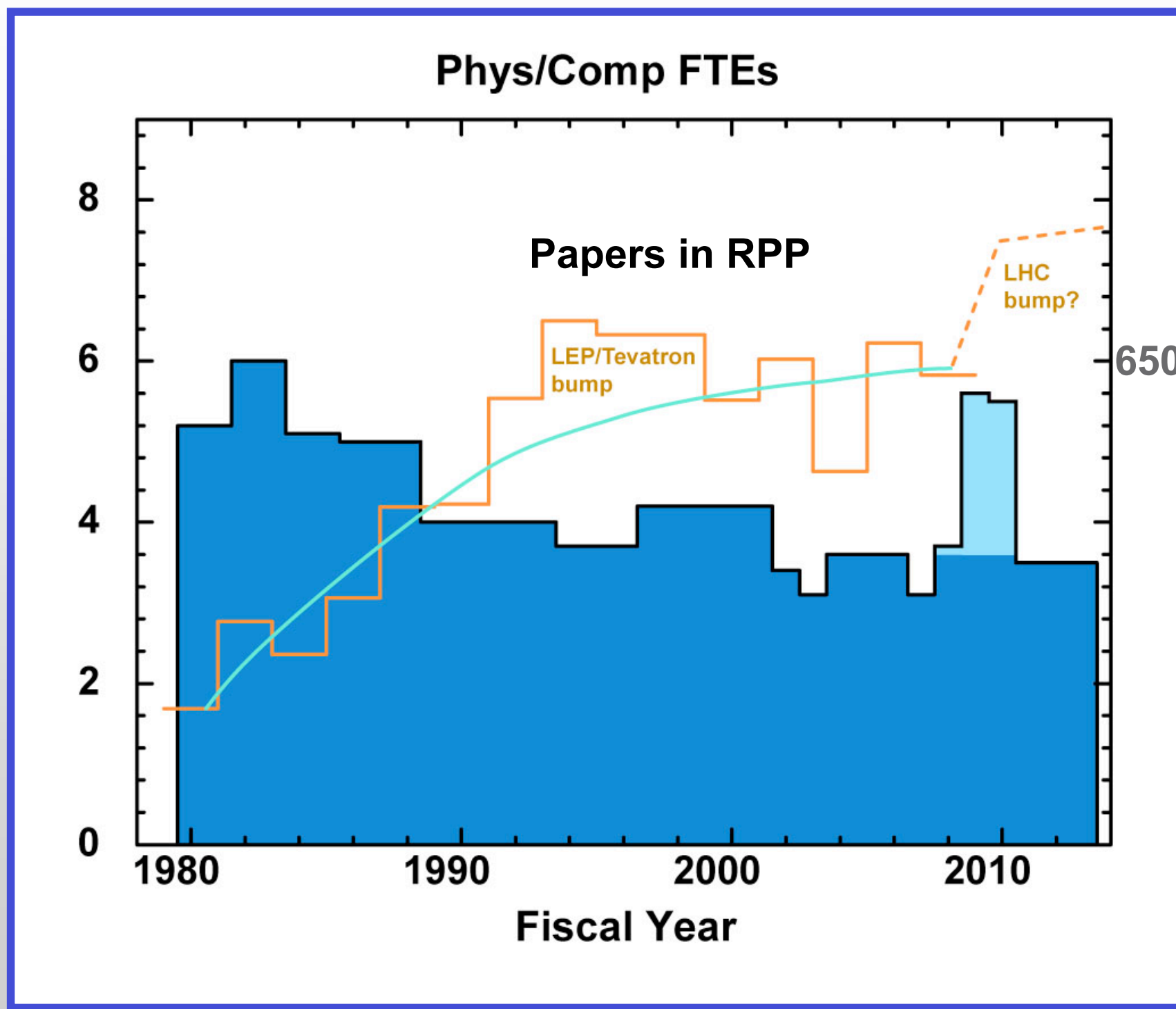


Scientific/Comp. “PDG” FTEs



PDG FTEs:
Time spent on
pure PDG
activities
(not
associated
research)

Scientific/Comp. “PDG” FTEs



The number of papers we handle each edition has tripled.

The number of reviews has grown even more.

Chronically Understaffed

**Consequences both for Quality and Schedule.
Historically RPP was completed in May or early June.
Always considered vital for summer conferences.**

Edition	Late	Date Completed
1998	17 days	June 18
2000	36 days	July 7
2002	60 days	July 30
2004	114 days*	June 24*
2006	46 days	July 17
2008	65 days	August 4

***Transition to new editor; target date
was March 1 instead of June 1**

Of 170 authors, **nine** are Berkeley PDG members (including the 4 retirees).

Over the past 20 years, PDG has been outstanding in outsourcing everything possible to others in our community.

There has to be a central organization that:

- coordinates everything,
- drives the schedule,
- assures quality,
- controls the outsourcing, and
- produces the products.

Quality control has to be the critical path.
The community relies on us.

➡ The only authors paid to do PDG work are in the LBNL PDG.
All others are volunteers.

With 170 authors, there are many points of failure.
LBNL's job to oversee all and make sure
there is no failure.

Budget in k\$ with Overheads

Totals for DOE + NSF + Japan

84% + 11% + 5% in FY09

salaries materials & supplies		FY08	FY09	FY10	FY11	FY12
	SWF	1647	2175	2280	1931	2015
	M&S	64	65	66	67	68
	Printing	81	21*	86	22*	91
	Travel, etc.	68	72	76	80	84
	TOTAL	1860	2333	2507	2100	2257

* RPP is not produced in odd years

Budget in k\$ without Overheads

Totals for DOE + NSF + Japan

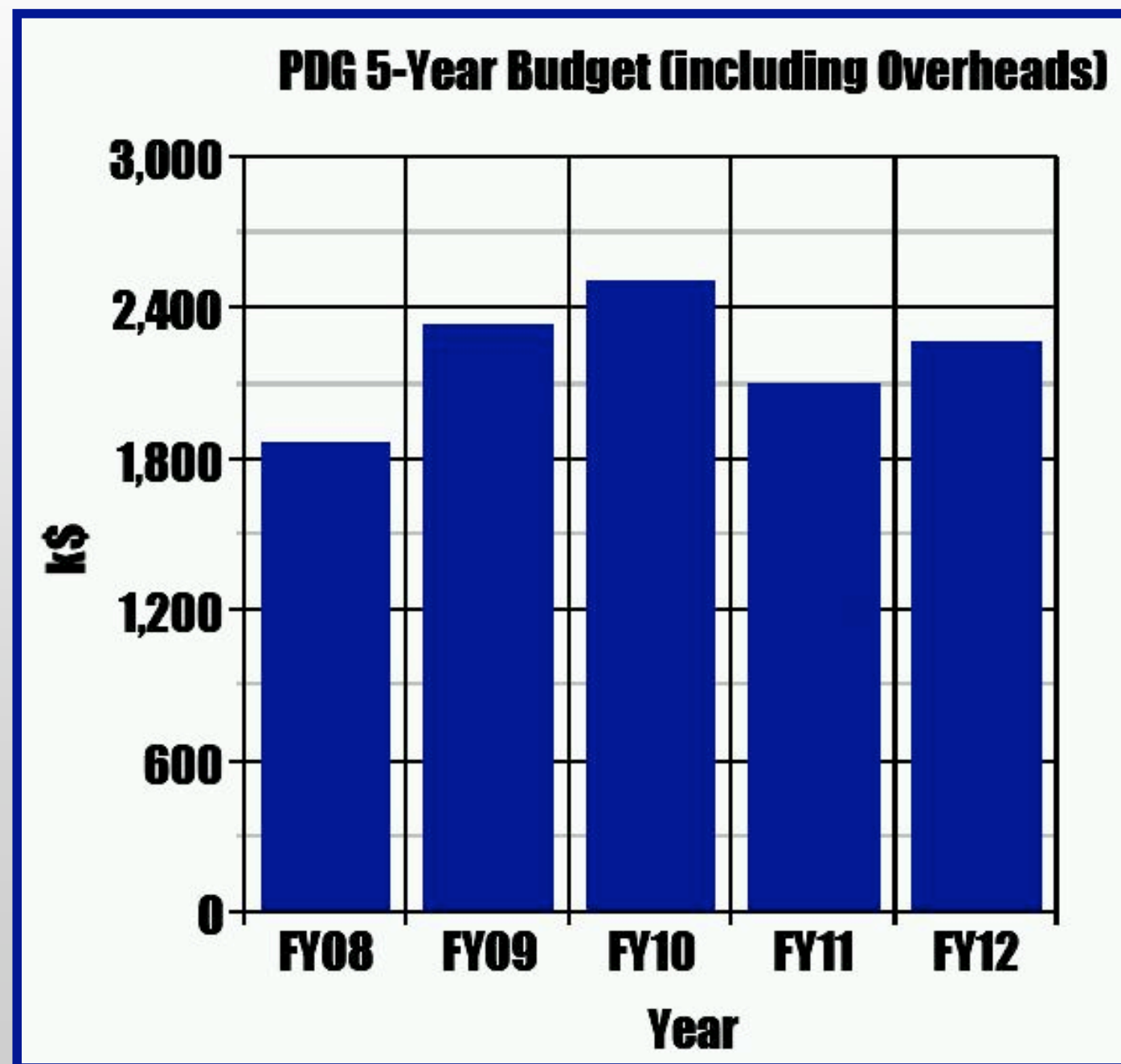
84% + 11% + 5% in FY09

	FY08	FY09	FY10	FY11	FY12
salaries	910	1201	1259	1065	1111
materials	52	53	54	55	56
& supplies	66	17*	70	18*	74
Printing	52	55	58	61	64
Travel, etc.	780	1008	1066	902	952
Overhead	1860	2333	2507	2100	2257
TOTAL					

* RPP is not produced in odd years

Budget in k\$ with Overheads

Totals for DOE (84%) + NSF (11%) + Japan (5%)



PDG uses 2 main Linux-based servers

- **Production server (pdg0.lbl.gov)**
 - “Workhorse” for all PDG work (RPP production, hosts database, user accounts, backups, ...)
 - Accessible only to PDG members
 - Dual-CPU 2.8 GHz Intel Xeon, 2GB RAM, 768GB RAID disk
- **Web server (pdg1.lbl.gov)**
 - PDG and outreach web pages
 - Provides other externally visible services (ordering system, mailing lists, feedback forms, ...)
 - Not necessary for book production
 - Dual-CPU 3.0 GHz Intel Xeon, 2GB RAM, 256GB RAID disk

Hardware Costs, Maintenance

- **Hardware costs small**
 - Cost of current servers was about \$4k each (2004)
 - Expect replacement every few years as needed
- **Basic system management done by Physics Division's system managers, including e.g.**
 - Linux installation, security patches, etc
 - System monitoring
 - Help with configuration tasks
 - User account creation
- **Other system management tasks done by PDG personnel**
 - Backups, maintenance of PDG database, ...

Alternative funding

Alternative sources of funding (national and international).
In-kind contributions and deliverables.

NSF: Direct funding at proportional level (10-11%)
at scale of products used by NSF-supported people.

Japan: Direct funding at scale of those received;
In-kind to cover expenses of Japanese members.

CERN: Pays for products shipped to CERN and distributed
throughout Europe.

It is a struggle to keep these contributions at the current
level. We do push each to pay for more.

In-kind contributions and deliverables.

- The 160 non-Berkeley PDG authors are all making in-kind contributions, since they are not paid, but work typically 5% time on PDG. Their deliverables are encoding of Data Listings and writing of Reviews.
- The CERN Meson Team has the entire sections on strongly decaying mesons as their deliverable.
- SLAC has a deliverable of linking SPIRES to RPP.
- Mirror sites deliver the mirrors.

But as discussed above, central coordination must remain.



The deliverables of the Particle Data Group are:

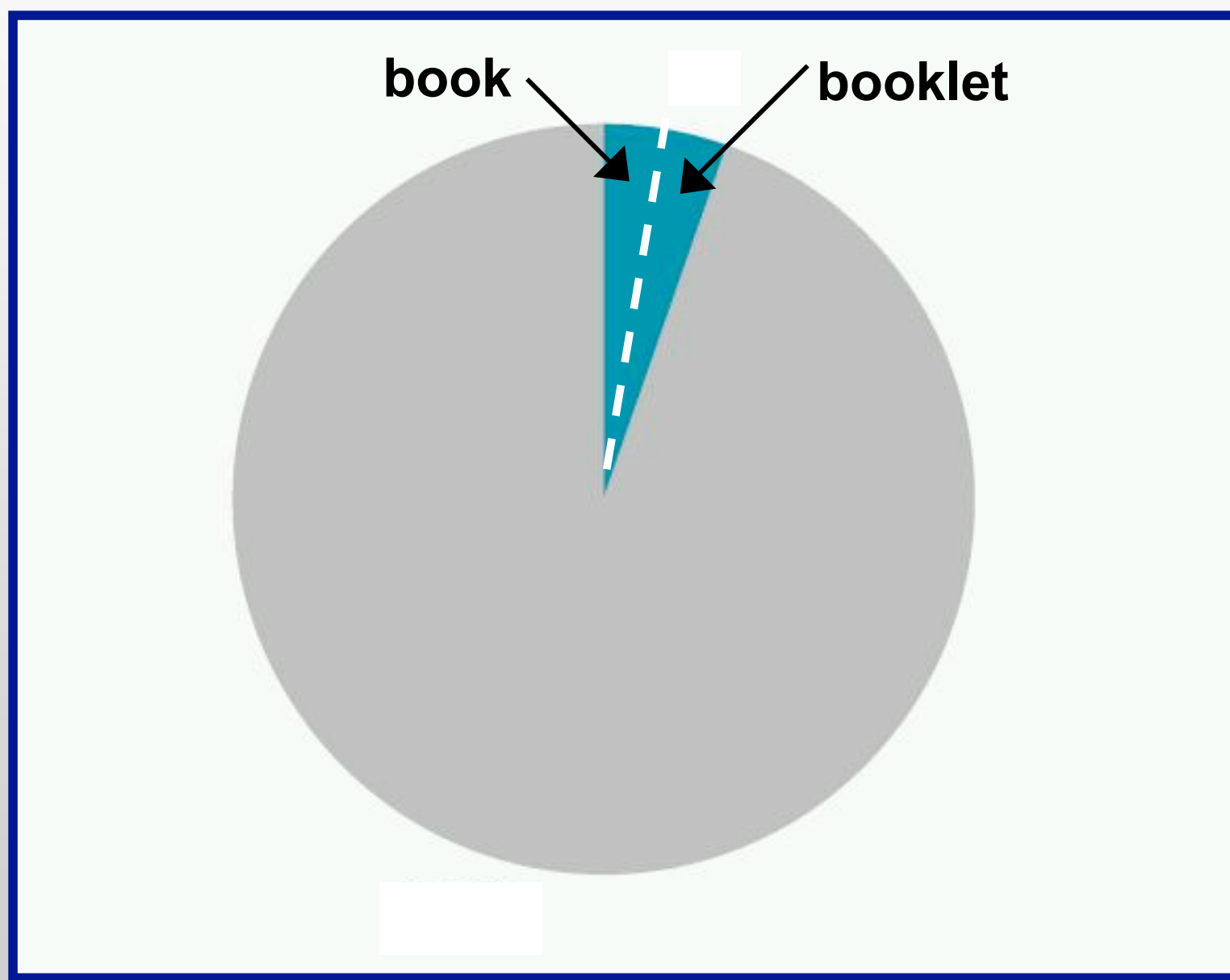
- 1. Web Edition**
- 2. Particle Physics Booklet**
- 3. *Review of Particle Physics* Book**
- 4. pdgLive (current version)**
- 5. Pocket Diary for Physicists with meetings,
address/phone List for HEP universities,
laboratories and agencies**

Why Important

- 3. *Review of Particle Physics Book***
- 4. *pdgLive (current version)***
- 5. *Pocket Diary for Physicists with meetings, address/phone List for HEP universities, laboratories and agencies***

Printing Book and Booklet

Fraction of PDG budget for printing



Relative cost of Book and Booklet depends on publisher

First approximation:
Book is 2.5%

THE QUESTION:

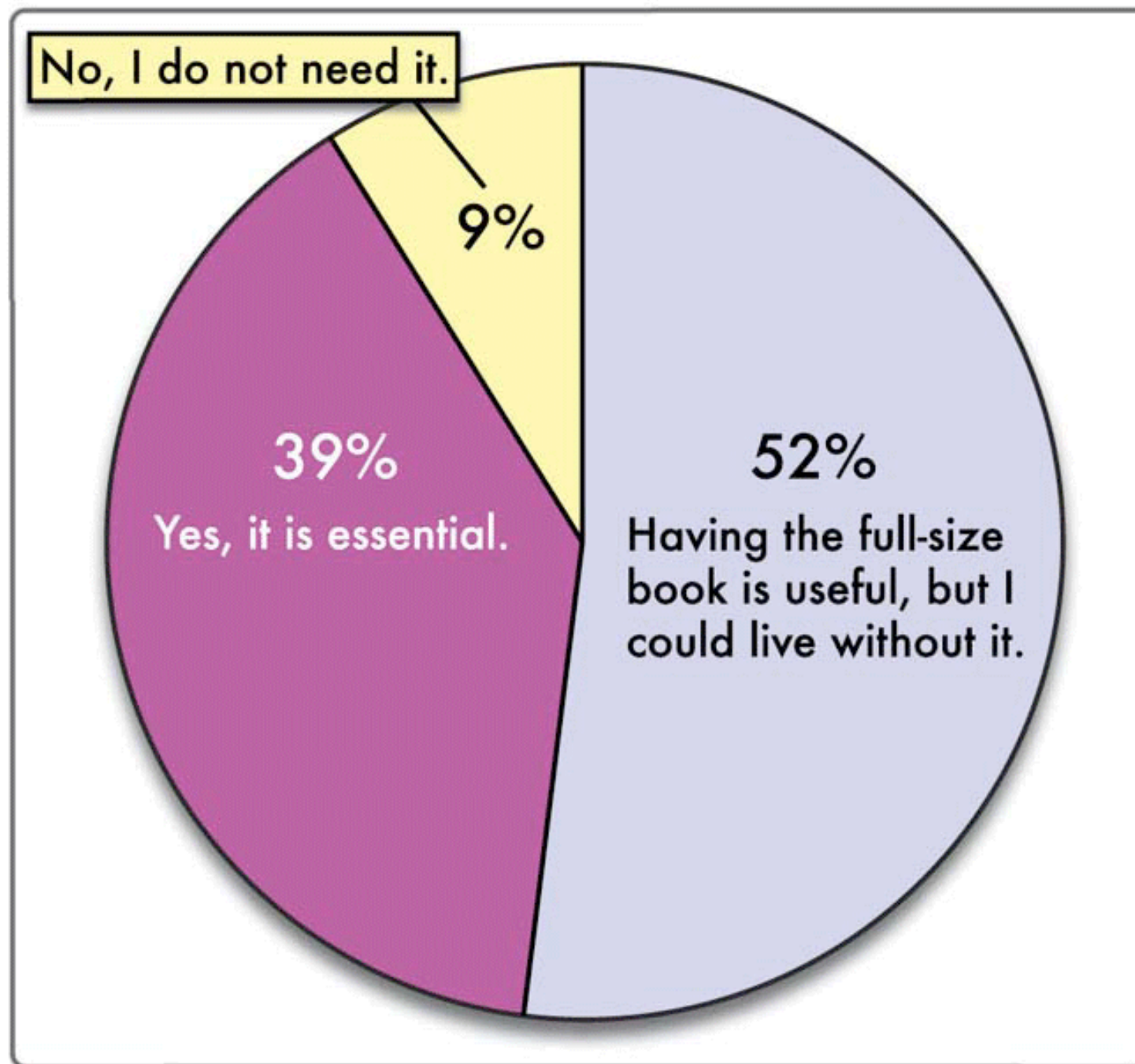
Is having a copy of the full-sized book essential to your work or study?

- ☐ Yes, it is essential.
- ☐ Having the full-size book is useful, but I could live without it.
- ☐ No, I do not need it.

TOTAL Responses 2450.

1226 also provided comments

Survey on Big Book



Many of the people who voted "useful" made strong comments urging continuance of the full-sized book:
"I could live without my right arm, but I don't want to."

Survey on Big Book

Table I – Results by Position (in percent)

	Essential	Useful	No Need
Faculty/Staff	39	52	9
Postdoc	50	46	4
Grad-Student	42	51	7

Diary for Physicists with

- Meeting Dates
- Holidays for travelers
- Daylight Savings time changes
- Birthdates of famous physicists

HEP Address/ Phone/ Email/ Website List for

- Universities
- Laboratories
- Agencies

Requested by 17,000 people



Finding the information you want will be much easier:

- **Enable powerful searches of RPP database**
- **Produce search results with Greek and math**
- **Link References to actual papers**

What Users Told Us about pdgLive

- “This is one of the nicest, clearest, and most useful Web pages in HEP. Superb job.”
- “PDG Live is absolutely wonderful. ... Plus, it's really beautiful and lots of fun. I'm so excited I can't even tell you.”
- “Bravo! This is the way I always hoped to browse PDG on the web!”
- “Question: What size army of graduate students was utilised to get pdgLive accomplished?”
- ...



- Ultimately enable powerful searches (only possible with upgraded system)
- <http://pdgLive.lbl.gov>
- *pdgLive* was programmed by two Russian graduate students and their father.
- It is a prototype application that shows what will be possible
- But its code is **not maintainable**.

- After the Computing Upgrade, the full potential of *pdgLive* will be realized
- It will be an invaluable resource to the HEP community
- At essentially **no ongoing cost**



The End